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CLASSIFICATION C O N F I D E N T I A L

CENTRAL INTELLIGENCE AGENCY

# INFORMATION REPORT

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COUNTRY USSR (Abkhazskaya ASSR)

DATE DISTR. 28 October 1955

SUBJECT Development of an Ion Source at the Sinop Atomic Energy Institute

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Annex 1

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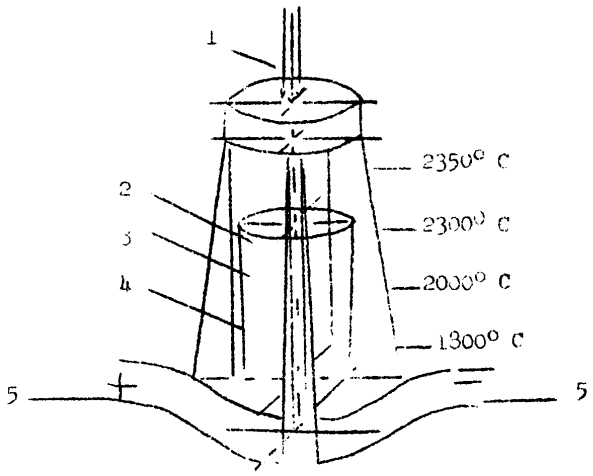
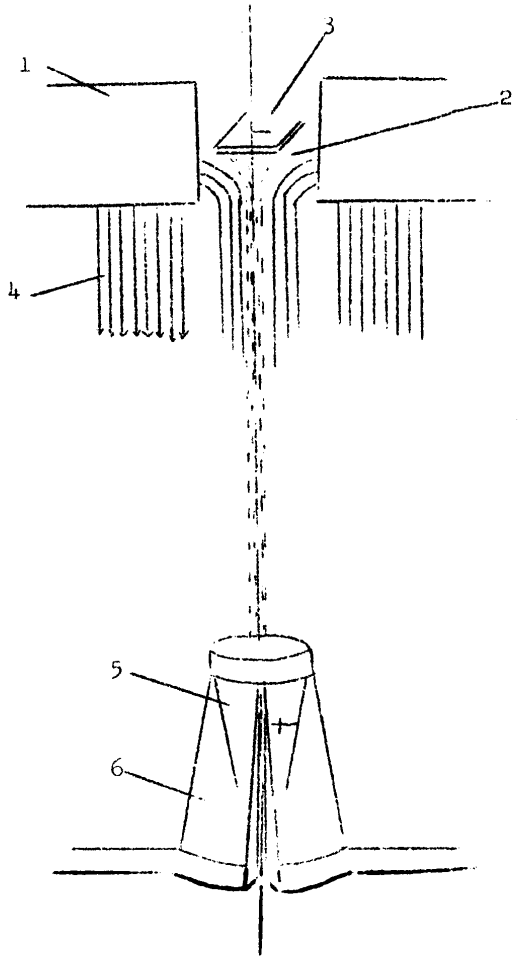



II

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[illegible]

I. Tungsten short-circuit furnace

1 - Electron beam from the cathode
2 - Tungsten sheet 0.1 mm thick
3 - Crucible
4 - Crucible support
5 - Molybdenium sheet 0.8 mm thick and tantalium sheet 0.1 mm thick, welded onto tungsten sheet.

II. Diagram of magnetic focussing

1 - Pole shoe
2 - Plasma space
3 - Cathode
4 - Magnetic field lines
5 - Crucible
6 - Tungsten short-circuit furnace

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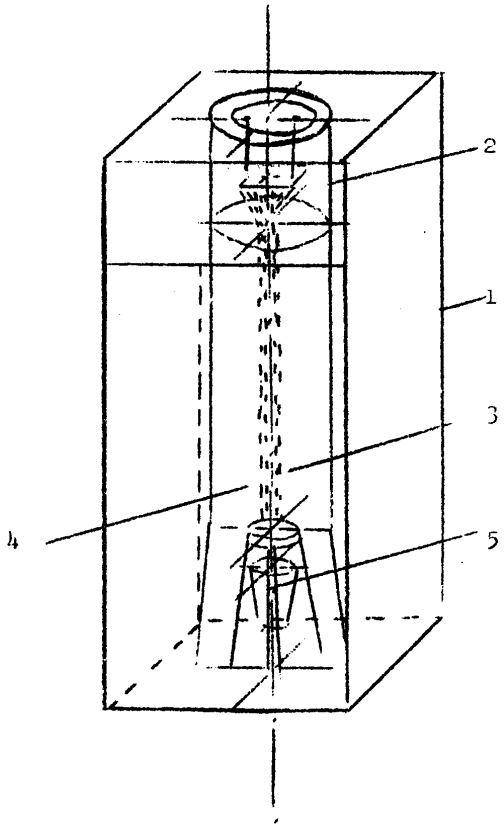
Annex 2



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Cold Ion Source

Legend.

1 - Copper block

2 - Cathode in iron

3 - Plasma

4 - Deflection

5 - Furnace and crucible



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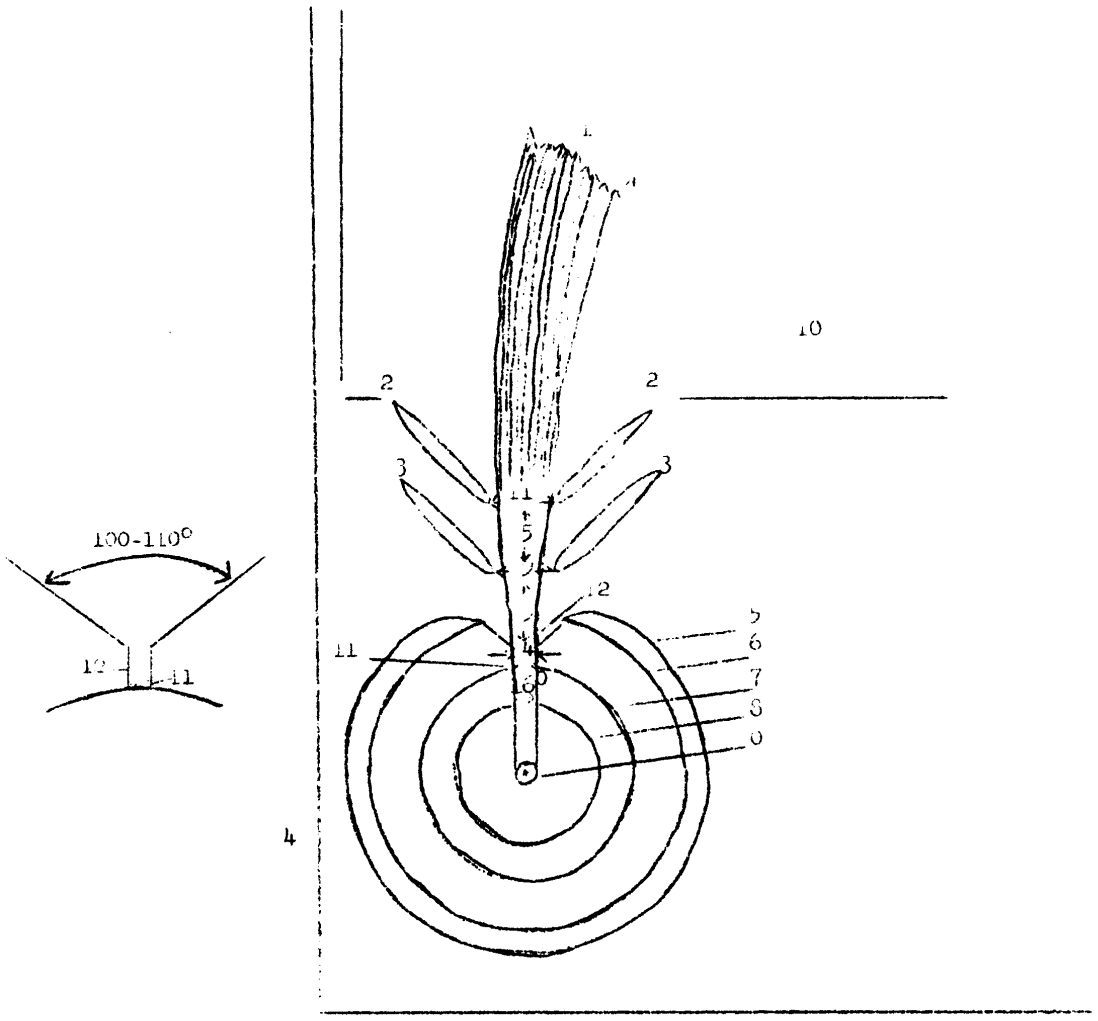


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Schematic Diagram of the Ion Source and the Pierce System.

Legend.

1 - Ion beam

2 - Molybdenium sheet 2 mm thick, 35,000 V voltage

3 - Molybdenium sheet 2 mm thick, 40,000 V voltage

4 - Brass walls of separation chamber

5 - Tantalium radiation protection shielding

6 - Molybdenium radiation protection shielding

7 - Tungsten jacket for furnace

8 - Crucible below furnace

9 - Cathode

10 - "Monanite"

11 - Ionization cathode with 4-mm ionization slit

12 - Ionization space



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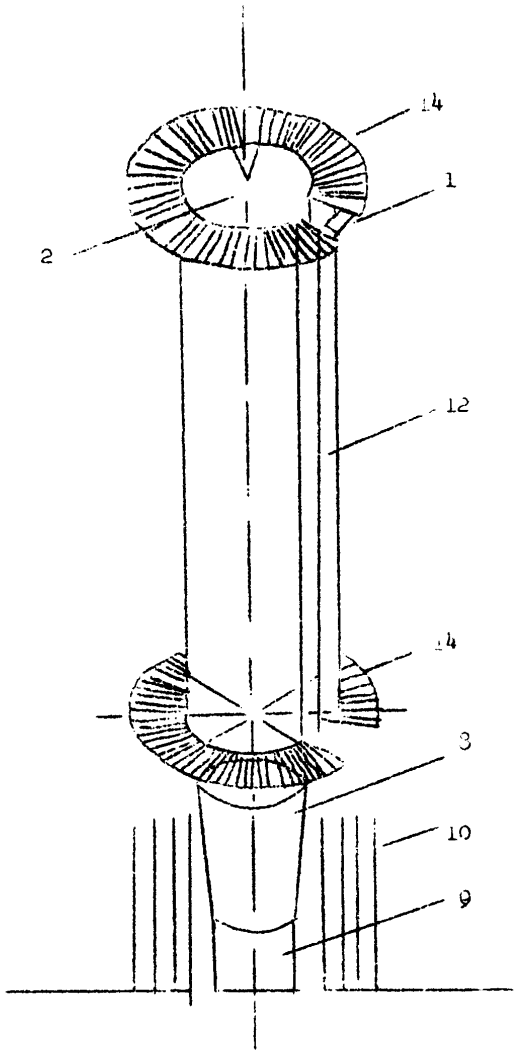




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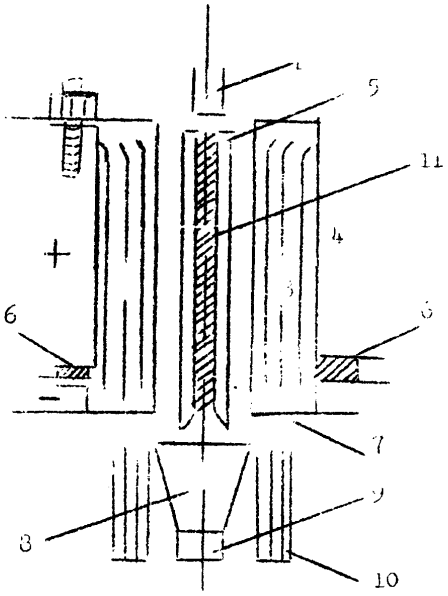


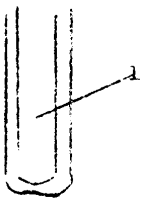


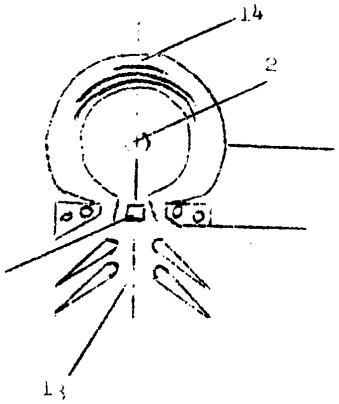




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Annex 4

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New Ion Source

Legend:

1 - Cathode I, of 2-mm tungsten wire bent manually

2 - Cathode II

3 - Tungsten furnace 30 mm long and 20 mm in diameter

4 - Copper block with 15 kW water cooling system

5 - Electrode I of water-cooled 6 -mm copper wire

6 - Beryllium insulators

7 - Thermal expansion lug (critical points forming of alloys)

8 - Crucible

9 - ire supports

10 - Molybdenum and tantalum radiation protection shielding

11 - 4 mm deflection slit

12 - Ionization space

13 - Pierce system

14 - Tantalum radiation protection shielding



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